

POTENTIAL ASSET-SHARING PATTERNS BASED ON SIMULATION RESULTS

I. INCREASED BANKS PUMPING CAPACITY, can be achieved in two ways. First, by expanding the period when high flows on the San Joaquin allow exports to expand to 1/3 of the San Joaquin River inflow. Alternatively, improvements to south delta improvements could increase capacity at the state pumps from about 6300 to about 8500 cfs at the state pumps through change in ACOE limitation (within other regulatory requirements).

Simulation results suggest:

1. This tool can yield considerable enhancements to exports in some years at the expense of removing most flexibility from the summer and fall
2. This tool can help fill San Luis early (by November) and avoid conflicts of exports with outmigrating salmon in December-April.
3. This tool can make real some water in dry years which monthly models claim for export but which daily models reveal to be less available (i.e. monthly E/I <35% but flows are high for only part of the month)
4. Problems produced by this tool occur principally in years of medium to high inflow.

Sharing of this asset to minimize problems could include:

1. Share water pumped in excess of current limits so that water owned by the EWA can be used to offset loss of flexibility whenever the additional capacity is used. Eg., EWA gets 50% and WMS gets 50% of all pumping at Banks in excess of 6300.
2. Use this tool as part of the WMS to augment export supply in dry years and use as a tool in wetter years to augment EWA supplies. Different sharing ratios based on hydrology would be a possible refinement.
3. Use the different increments of increased export capacity to generate export supply and the other increment to generate EWA supply. The lower increment would be used more often. For example, increasing capacity from 6300 to 7500 could be used more frequently without violating water quality control plan restrictions. At higher flows the additional increment from 7500 to 8600 would become available.

II. ACCESS TO SURPLUS CAPACITY. Currently, when one project reaches a bottleneck (such as filling state storage in San Luis) the facilities of that project operate at a greatly reduced capacity even if the other project could use that capacity. Largely, this topic centers around what is called the Joint Point of Diversion (JPOD). However, restructuring the coordinated operations agreement of the two projects (COA) also has the capacity to enhance overall performance in similar ways. Such reoperations have been done, so far, only in pursuit of environmental goals.

Simulation results suggest that:

1. Sharing of capacity at facilities is a prerequisite to an effective EWA.
2. Unlimited use of the joint point of diversion allows increased supplies (mostly to federal contractors) in medium to wetter years. These higher diversions can have some added impacts of entrainment and associated mortality at the state facilities.
3. Use of JPOD may produce conflict between the state's customers for interruptible supplies and the federal contractors.

Sharing of this asset to minimize problems could include:

1. Sharing of unused capacity (at cost) has been assumed in most EWA discussions to date. Because of its potential impact on other users, EWA has always been assumed to lose its storage capacity whenever it was needed by another user.
2. To mitigate for environmental impacts of JPOD, water pumped by the state could be shared between the federal contractors and EWA.
3. To mitigate for impacts of JPOD, storage in San Luis could be provided with some assurance of priority that could balance possible impacts of additional pumping of water to federal contractors.
4. Compensation might be paid to the state interruptible supply users by the federal contractors or some portion of federal storage supplies might be made available to state contractors.

III. MARKET ACTIONS:

The San Joaquin River Agreement is a model of contracting for environmental water supplies on a long term basis, in a way that minimizes impacts on other users by allowing flexibility in the exact methods used to achieve a desired environmental condition. Similar contracts and options could be used as part of any increased supplies into the delta.

Simulation results suggest that:

1. Not all EWA actions require that water be unavailable for export.
2. Some EWA actions can have secondary improvements to water quality in the delta.
3. EWA market purchases have the potential to reduce transfer capacity and drive up prices.

Sharing of this asset to minimize problems could include:

1. Pooling of funds to purchase water supplies at lower cost for each party than either party could afford separately.
2. Pooling of funds from water quality programs to help achieve environmental improvements at lower cost than either party could afford separately.
3. Access to more general support and reasonable prices because of shared goals within the environmental, regulatory or water management communities. (I.e. a waterholder may be much more willing to sell water to some parties than others; by forming mutual purchase coalitions waterholders will likely have some an acceptable recipient within the coalition.)

IV REGULATORY FLEXIBILITY

The only readily available tool in this category is manipulation of the Export/Inflow restriction, which generally states that total exports will not exceed 35% of inflow in February-June and 65% of inflow from July to January. The averaging period for this restriction is as important in determining its impact as the target number..

Simulation results suggest that:

1. The E/I restriction has an impact on federal contract commitments to percent deliveries almost every year.
2. The E/I this restriction actually affects exports only in the February-June period in drier years.
3. Most use of this tool in simulation was accomplished by changing the averaging period from

14 days to 3 days, rather than by changing the target number. Such manipulations made some substantial quantities of water available to the EWA. On one occasion this tool shifted pumping patterns strongly within a single month. As with JPOD and increased Banks capacity, the monthly model failed to identify as much value of this tool as was found with the daily model.

Sharing of this asset to minimize problems could include:

1. Establishing some high priority but short term storage site for water generated in this fashion.
2. Establishing some process for transferring water generated in this fashion to export interests if it is not needed within the period during which it has storage available. This might take the form of a simple purchase or a swap of EWA water in San Luis for water in some upstream storage site.